

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Seung-Cheol LEE et al.

Examiner: Venkatesh HALIYUR

Serial No.: 10/822,309

Group Art Unit: 2619

Filed: April 12, 2004

Docket: 678-1306 (P11230)

For: **APPARATUS AND METHOD FOR MULTIMEDIA REPRODUCTION
USING OUTPUT BUFFERING IN A MOBILE COMMUNICATION
TERMINAL**

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313

TRANSMITTAL OF APPELLANTS' BRIEF ON APPEAL

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Enclosed please find APPELLANTS' BRIEF.

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Respectfully submitted,



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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE
BOARD OF PATENT APPEALS AND INTERFERENCES**

APPLICANT(S): Seung-Cheol LEE et al. **ART UNIT:** 2619
APPLICATION NO.: 10/822,309 **EXAMINER:** Venkatesh HALIYUR
FILING DATE: April 12, 2004 **DATED:** September 8, 2008
FOR: **APPARATUS AND METHOD FOR MULTIMEDIA
REPRODUCTION USING OUTPUT BUFFERING IN A
MOBILE COMMUNICATION TERMINAL**

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APPELLANTS' BRIEF ON APPEAL

REAL PARTY IN INTEREST

The real party in interest is Samsung Electronics Co., Ltd., the assignee of the subject application, having an office at 416, Maetan-dong, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea.

RELATED APPEALS AND INTERFERENCES

To the best of Appellants' knowledge and belief, there are no currently pending related appeals, interferences or judicial proceedings.

STATUS OF CLAIMS

The original application filed on April 12, 2004 contained Claims 1-12. Thus, Claims 1-12 are pending in the Appeal. Claims 1 and 9 are in independent form.

STATUS OF AMENDMENTS

To date, there have been no amendments made to the claims. Thus, the Appendix to this Appeal Brief includes Claims 1-12, the status of which are indicated as "Original."

SUMMARY OF CLAIMED SUBJECT MATTER

The invention, as recited in Claim 1, relates to a multimedia reproduction apparatus using output buffering in a mobile communication terminal. The apparatus comprises a data parsing section for dividing multimedia data into video data and other data and then parsing the video data and the other data. The apparatus also comprises a video data processing section for decoding, by the frame, the parsed video data, which is transmitted from the data parsing section, and for buffering a predetermined number of video frames of the decoded data. The apparatus additionally comprises a media delay output controller for delaying the other data parsed by and transmitted from the data parsing section according to buffering information of the video data processing section, for outputting the delayed data, and for generating a synchronizing signal. The apparatus further comprises an audio data processing section for decoding and outputting audio data from among the other data output from the media delay output controller. The apparatus also comprises a video data output section for reading and outputting the video data buffered by the video data processing section, by the frame using control data from among the other data output from the media delay output controller. A synchronizing section synchronizes and outputs the video data output from the video data output section and the audio data output from the audio data processing section according

to a synchronizing signal of the media delay output controller. (Specification, page 9, line 7, through page 10, line 18, and FIG. 6).¹

The invention, as recited in Claim 2, relates to the multimedia reproduction apparatus of Claim 1, in which the video data processing section comprises a video controller for outputting the parsed video data received from the data parsing section by the frame. The video data processing section also comprises a video decoder decoding the video data received by the frame through the video controller, by the frame. The video data processing section additionally comprises a buffer for buffering the predetermined number of video frames of the decoded video data, and transmitting a buffering completion signal to the video controller when the predetermined number of video frames have been buffered. The video controller transmits buffering information to the media delay output controller according to the buffering completion signal received from the buffer. (Specification, page 9, line 25, through page 10, line 10, and FIG. 6, 603, 605, 606).

The invention, as recited in Claim 9, relates to a control method using output buffering to reproduce multimedia data in a mobile communication terminal. The multimedia data is received and divided into video data and other data, and the video data and the other data are parsed, respectively, in the mobile communication terminal. Video frame start addresses of the parsed video data are stored, the video data is decoded by the frame, and a predetermined number of video frames are buffered. The parsed other data is output after delaying the other data as long as the predetermined number of buffered video frames. Audio data is decoded and output by the frame in which the audio data is included in the output data, and buffered video frames are output according to control information included in the output data. The output video frames and audio frames are synchronized according to time information. (Specification, page 11, line 27, through page 13, line 25, and FIG. 8).

The invention, as recited in Claim 10, relates to the control method of Claim 9, in which a buffering completion control signal is generated when the predetermined number of video frames has

¹ Although a citation for each feature of the claims is provided herein, Appellants note that support may be found elsewhere in the written description

been buffered. The buffering completion control signal is transmitted, and the delaying process to be performed is controlled. (Specification, page 12, line 11, through page 13, line 2, and FIG. 8, 806, 807).

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Whether Claims 1-12 are unpatentable under 35 U.S.C. §103(a) over U.S. Publication No. 2004/0057446 to *Varsa et al.* (hereinafter, *Varsa*) in view of U.S. Publication No. 2002/0141740 to *Matsui*.

ARGUMENT

The Examiner rejected Claims 1-12 under 35 U.S.C. §103(a) as being unpatentable over the combination of *Varsa* and *Matsui*.

I. Claims 1-12 are patentable over the combination of *Varsa* and *Matsui*

A. Independent Claim 1

The Examiner contends that each element of Claim 1 is taught, suggested or rendered obvious by the combination of *Varsa* and *Matsui*.² More specifically, the Examiner contends that each element of Claim 1 is taught or suggested by *Varsa* with the exception of a synchronizing section for synchronizing and outputting the video data output from the video data output section and the audio data output from the audio data processing section according to a synchronizing signal of the media delay output controller. The Examiner cites *Matsui* in an attempt to remedy this deficiency.³

Claim 1 recites, in part, a multimedia reproduction apparatus using output buffering in a mobile communication terminal. The apparatus comprises a data parsing section, a video data

² See Final Office Action dated March 6, 2008, page 2.

³ See Final Office Action dated March 6, 2008, page 3.

processing section, a media delay output controller, an audio data processing section, a video data output section, and a synchronizing section.

Varsa discloses the enablement of a streaming server to optimally operate its rate-control and rate-shaping algorithms in order to compensate for packet transfer delay variation by monitoring and controlling the distribution of the end-to-end delay for a given packet.⁴ *Matsui* discloses a data reproduction process in which anti-transmission-error property and video quality of video data to be obtained at a receiving end can be changed according to the user's preference or the occurrence status of transmission error, at the receiving end of the video data.⁵

Varsa describes a media decoder that may comprise a video decoder and an associated audio decoder.⁶ As the media data is decoded by the media decoder, it is output to a post-decoder buffer where it is stored temporarily until play out.⁷ *Varsa* fails to provide any disclosure relating to the buffering of a predetermined number of video frames, as recited in Claim 1.

The buffer of *Varsa* does not distinguish between video and audio data after it is decoded as described above. *Varsa* also only describes that the media data is buffered after decoding. The media delay output controller of Claim 1 delays data parsed from the video data. Audio data from the delayed data is then decoded. Thus, *Varsa* fails to disclose a delay controller that delays data before decoding, as recited in Claim 1. *Varsa* also fails to disclose a video data processing section that buffers video frames of the decoded data, and a separate media delay output controller that delays the other data, as recited in Claim 1. Further, *Varsa* fails to disclose that the parsed other data is delayed according to buffering information of the video data processing section, as recited in Claim 1. Finally, *Varsa* fails to provide any disclosure relating to a media delay output controller that generates a synchronizing signal, as recited in Claim 1. *Matsui* fails to remedy the above deficiencies of *Varsa*.

⁴ See *Varsa*, Abstract.

⁵ See *Matsui*, Abstract.

⁶ See *Varsa*, paragraph [0060].

⁷ See *Varsa*, paragraph [0060].

In the Final Office Action, the Examiner contends that *Varsa* discloses a method for delaying decoded media data.⁸ However, as described above, *Varsa* only provides a description of a post-decoder buffer that stores media data. *Varsa* fails to provide any disclosure relating to another separate element that delays the data that was divided from the video data before decoding.

In the Advisory Action, the Examiner contends that *Varsa* discloses that media data is delayed based on the type of media data by the buffer controller and the audio data is decoded and output from among the other data.⁹ However, *Varsa* fails to provide any disclosure that media data is delayed based on the type of media data. The Examiner again contends that the audio data is decoded separately in an audio decoder while the video data is decoded separately in a video decoder and output to a post-decoder buffer where it is delayed until a play out time arrives. However, as described above, while *Varsa* describes separate decoding, it only describes a single storage buffer, and fails to provide any disclosure relating to the separate storage and delay of the video and audio data, respectively.

Although *Matsui* describes a synchronization markup language that plays a role in initializing video streams based on received real-time transport protocol data,¹⁰ it fails to disclose the synchronization and output of video data and audio data according to a synchronizing signal, as recited in Claim 1. In the Final Office Action and the Advisory Action, the Examiner contends that *Matsui* discloses a method of using synchronizing signals to reproduce video and audio data from the streaming data with SMIL unit.¹¹ However, *Matsui* fails to disclose that such synchronization of the video and audio data is performed according to a signal from a media delay output controller, which delayed parsed data according to buffering information of a video data processing section, as recited in Claim 1. Thus, *Matsui* fails to remedy the deficiencies of *Varsa*.

⁸ See Final Office Action dated March 6, 2008, page 7.

⁹ See Advisory Action dated June 13, 2008, page 2.

¹⁰ See *Matsui*, paragraph [0160].

¹¹ See Final Office Action dated March 6, 2008, page 8, and Advisory Action dated June 13, 2008, page 2.

Accordingly, the combination of *Varsa* and *Matsui* fails to teach, suggest or render obvious each and every element of Claim 1. Therefore, it is respectfully submitted that Claim 1 is allowable over the combination of *Varsa* and *Matsui*.

B. Independent Claim 9

Claim 9 recites, in part, a control method using output buffering to reproduce multimedia data in a mobile communication terminal. Multimedia data is received, divided and parsed. Video frame start addresses are stored, video data is decoded, and a predetermined number of video frames are buffered. Other parsed data is output after a delay. Audio data is decoded and output by the frame. Video frames and audio frames are synchronized and output according to time information.

Appellants assert that Claim 9 is patentable for at least the reasons presented above with regard to Claim 1. More specifically, Claim 9 recites that a predetermined number of video frames are buffered, that the parsed other data is delayed before decoding audio data from the parsed other data, the separate buffering of video frames after decoding and delaying of parsed other data before decoding, and that the parsed other data is delayed as long as the predetermined number of buffered video frames. As described above with regard to Claim 1, the combination of *Varsa* and *Matsui* fails to teach, suggest or render obvious these steps.

Accordingly, the combination of *Varsa* and *Matsui* fails to teach, suggest or render obvious each and every element of Claim 9. Therefore, it is respectfully submitted that Claim 9 is allowable over the combination of *Varsa* and *Matsui*.

C. Dependent Claims 2 and 10

Claims 2 and 10 are patentable at least by virtue of their dependency from independent Claims 1 and 9. The patentability of Claims 1 and 9 is described above. Claims 2 and 10 also recite patentable subject matter in their own right.

Claims 2 and 10 recite, in part, that a buffer transmits a buffering completion signal to the video controller when the predetermined number of video frames have been buffered, and that

the video controller transmits buffering information to the media delay output controller according to the buffering completion signal received from the buffer.

The Examiner cites a portion of *Varsa* describing a means for providing information indicative of a client's chosen buffering parameters from a streaming client device to a streaming server device.¹² However, *Varsa* fails to provide any disclosure relating to the transmission of a signal from a buffer to a controller within a single apparatus. Further, while *Varsa* describes buffering parameters, it fails to provide any disclosure relating to a signal relating to the completion of buffering a predetermined number of frames. *Varsa* also fails to disclose the transmission of information from a video controller to a delay output controller relating to the buffering completion signal, as recited in Claims 2 and 10. *Matsui* fails to remedy these deficiencies of *Varsa*.

Accordingly, the combination of *Varsa* and *Matsui* fails to teach, suggest or render obvious each and every element of Claims 2 and 10. Therefore, it is respectfully submitted that Claims 2 and 10 are allowable over the combination of *Varsa* and *Matsui*.

D. Dependent Claims 3-8, 11 and 12

Claims 3-8, 11 and 12 are patentable at least by virtue of their dependency from independent Claims 1 and 9. The patentability of Claims 1 and 9 is described above. Claims 3-8, 11 and 12 also recite patentable subject matter in their own right. Accordingly, it is respectfully submitted that because the above arguments place the independent claims in condition for allowance, these dependent claims are also believed to be in condition for allowance.

Accordingly, Appellants assert that Claims 1-12 are allowable over the combination of *Varsa* and *Matsui*, and respectfully requests withdrawal of the rejection under 35 U.S.C. §103(a).

¹² See Final Office Action dated March 6, 2008, pages 4 and 6.


CONCLUSION

It is well settled that in order for a rejection under 35 U.S.C. §103(a) to be appropriate, the claimed invention must be shown to be obvious in view of the prior art as a whole. A claim may be found to be obvious if it is first shown that all of the recitations of a claim are taught in the prior art or are suggested by the prior art. In re Royka, 490 F.2d 981, 985, 180 U.S.P.Q. 580, 583 (C.C.P.A. 1974), cited in M.P.E.P. §2143.03.

The Examiner has failed to show that all of the recitations of Claims 1-12 are taught or suggested by the art of record, or the combination thereof. Accordingly, the Examiner has failed to make out a prima facie case for an obviousness rejection.

As the Examiner has failed to make out a prima facie case for the obviousness rejections, the rejections of Claims 1-12 must be reversed.

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CLAIMS APPENDIX

1. (Original) A multimedia reproduction apparatus using output buffering in a mobile communication terminal, the apparatus comprising:

a data parsing section for dividing multimedia data into video data and other data and then parsing the video data and the other data;

a video data processing section for decoding, by the frame, the parsed video data, which is transmitted from the data parsing section, and for buffering a predetermined number of video frames of the decoded data;

a media delay output controller for delaying the other data parsed by and transmitted from the data parsing section according to buffering information of the video data processing section, for outputting the delayed data, and for generating a synchronizing signal;

an audio data processing section for decoding and outputting audio data from among the other data output from the media delay output controller;

a video data output section for reading and outputting the video data buffered by the video data processing section, by the frame using control data from among the other data output from the media delay output controller; and

a synchronizing section for synchronizing and outputting the video data output from the video data output section and the audio data output from the audio data processing section according to a synchronizing signal of the media delay output controller.

2. (Original) The multimedia reproduction apparatus as claimed in claim 1, wherein the video data processing section comprises:

a video controller for outputting the parsed video data received from the data parsing section by the frame;

a video decoder decoding the video data received by the frame through the video controller, by the frame; and

a buffer for buffering the predetermined number of video frames of the decoded video data, and transmitting a buffering completion signal to the video controller when the predetermined number of video frames have been buffered, the video controller transmitting buffering information to the media delay output controller according to the buffering completion signal received from the buffer.

3. (Original) The multimedia reproduction apparatus as claimed in claim 1, wherein the synchronizing signal of the media delay output controller is time information.

4. (Original) The multimedia reproduction apparatus as claimed in claim 1, wherein the predetermined number of video frames are buffered, so that the video data is output by an average decoding time of the predetermined and buffered number of video frames.

5. (Original) The multimedia reproduction apparatus as claimed claim 1, wherein the multimedia data is data of a Korea 3 Generation (K3G) type.

6. (Original) The multimedia reproduction apparatus as claimed in claim 1, wherein the multimedia data is data of a third Generation Partnership Project (3GPP) type.

7. (Original) The multimedia reproduction apparatus as claimed in claim 1, wherein the multimedia data is data of a third Generation Partnership Project 2 (3GPP2) type.

8. (Original) The multimedia reproduction apparatus as claimed in claim 1, wherein the multimedia data is data of a Real-time Transport Protocol (RTP) type.

9. (Original) A control method using output buffering to reproduce multimedia data in a mobile communication terminal, the control method comprising the steps of:

(1) receiving the multimedia data, dividing multimedia data into video data and other data, and parsing the video data and the other data, respectively, in the mobile communication terminal;

(2) storing video frame start addresses of the video data parsed in step (1), decoding the video data by the frame, and buffering a predetermined number of video frames;

(3) outputting the other data parsed in step (1) after delaying the other data as long as the predetermined number of video frames buffered in step (2);

(4) decoding and outputting audio data by the frame in which the audio data is included in the data output in step (3), and the outputting video frames buffered in step (2) according to control information included in the data output in step (3); and

(5) synchronizing and outputting the video frames and audio frames output in step (4) according to time information.

10. (Original) The control method as claimed in claim 9, further comprising a step (6) of generating a buffering completion control signal when the predetermined number of video frames have been buffered in step (2), transmitting the buffering completion control signal, and controlling the delaying process of step (3) to be performed.

11. (Original) The control method as claimed in claim 9, wherein the predetermined number of video frames are buffered and output, so that the video frames are output by an average decoding time of the predetermined and buffered number of video frames.

12. (Original) The control method as claimed in claim 9, wherein, in step (5), when the time information of a video frame and an audio frame output in step (4) does not correspond to each other, a frame having prior time information waits for the other frame from among the video frame and the audio frame, thereby performing the synchronization.

EVIDENCE APPENDIX

There is no evidence submitted pursuant to 37 C.F.R. 1.130, 1.131, 1.132 or entered by the Examiner and relied upon by Appellants.

RELATED PROCEEDINGS APPENDIX

There are no known decisions rendered by a court or the Board in any proceeding identified pursuant to paragraph (c)(1)(ii) of 37 C.F.R. 41.37.